THE ROLE AND IMPACT OF BUSINESS PROCESS MANAGEMENT OF THAI CONSTRUCTION INDUSTRY TOWARD AEC AND ASEAN

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Abstract

Sophisticated business process management (BPM) is needed if Thailand's construction industry is to maintain competitive advantage and meet the opportunities and challenges of ASEAN (The Association of Southeast Asian Nations). With the establishment of the AEC and Western organizations focusing more on Asia, the market place changed for the Thai construction industry. This research attempts to investigate what the Thai construction industry is doing to manage their information within the framework of AEC and ASEAN. It explores current methods of business process management and how some companies are changing to meet the challenges that will be faced in the near future. The study found that the majority of the Thai construction industry is still struggling to meet the needed changes necessary for improved business process management, economic integration and the competitiveness that AEC has brought to the ASEAN community. BPM need to be put in place or existing systems improved to allow the integration of multi-dimensional systems that contain all major functions of the business. The language skills, professional standards, qualifications and rankings of quality in tertiary education are significantly for Thailand.

Keywords: Business Process Management (BPM), Economic Integration, ASEAN (The Association of Southeast Asian Nations), ASEAN Economic Community (AEC)

Introduction

While Henry Ford may have revolutionized mass production with the assembly line in the early 20th century, however, this only addressed the mechanics of the process (New York Daily News, 2017). A number of issues still needed to be addressed such as the value of the process, how was the workflows composed, or what was the productivity of those people engaged in the process? (Rodriguez, 2009). BPM is a process that removes a number of causes of error or mixed messages and details exactly what is to be done by all involved, thus removing a higher chance for error. With the advent of sophisticated software, business process management has continued to be transformed and the pace is faster now than ever. However, even though business processes have been studied for a long time and from many perspectives, these processes are still not very well understood, not properly managed and when applied, poorly executed. Today business schools focus on teaching function specific and narrow process and IT schools focus on marginal technical skills with learning and understanding the process and its integration into a business scenario is left to the individual (Seethamraju, 2012). BPM needs be taught to fill the gap between university education and practice and to develop appropriate training and development strategies for business education with applications to the real world.

In 1963 Prof. Bundhit Kantabutra from Chulalongkorn University in Bangkok brought the first two computers into Thailand – an IBM 1620 and an IBM 1401 (Kantabutra, 2001). This marked the beginning of the Thai Information Age. Both of these computers were brought into the country primarily for the development of statistics in Thailand. The IBM 1620 was installed at Chulalongkorn University's Statistics Department, and the IBM 1401, was installed at the National Statistical Office to deal with "real-world" statistics problems, tabulating numbers and printing. Classes were open to all for only a small fee. This move signaled the start of Information Processing in Thailand. People came from all walks of life came to attend these classes, and eventually many often ended up taking important posts in academia, government, and industry.

Multiple choices are now available to businesses that used to use some of the newer technologies and advanced databases such as mobile devices, virtualization and cloud computing and social media.

The Thai construction industry expanded to over 41.4 billion dollars in 2016, with approximately 43% coming from the private sector and the remaining 57% focused on

improving the country's transportation system through public infrastructure investments by the government (Lorenzzo, 2017). However, in 2017, there was an overall decline in the construction sector of 2.3 percent, with public construction declining by 3.0 percent and private construction decreasing by 1.0 percent (NESDB Report, 2018). According to a report by Krungsi Research (2017), the Thai construction industry is set to grow by 8-12% into 2019 benefiting larger contractors and their smaller sub-contractors and in many cases creating backlogs in the volume of work. Public construction is estimated to grow at a rate of 13-16.0% through 2018 and into 2019 based on the public sector mega-project progression with a total value of these projects over the two years estimated at 60 billion dollars. This will potentially also see the growth of construction projects into the neighboring countries, creating additional possibilities for Thai contractors to expand into the ASEAN region. This expansion will necessitate the need for skilled management of information and personnel.

Since the construction industry is basically an information-based industry, which necessitates the most effective and efficient tools in management, mobile devices are a valuable tool in the information flow between project teams (Fathi, Abedi, & Rawai, 2012). These tools help deal with the complexity and changing needs of projects. With advances in communication technologies, mobile phones offer an alternative way to provide effective collaboration on construction projects, thus providing sustainable project management. These technologies now have the potential of improving the sustainability of projects, construction resources and the overall impact of improving sustainable project management in the construction industry. However, in a recent report by McKinsey & Company (Barbosa et al., 2017), relative to the world economy, the construction industry contributes to 13% of the world GDP, but has increased annual productivity of only 1% over the last 20 years. They further note that seven main areas could be addressed to achieve higher productivity: reshape regulation; rewire contracts; rethink design; improve onsite execution; infuse technology and innovation; reskill workers; improve procurement and supply chain. Two major factors that could hinder the potential growth of the Thai construction industry are the supply of construction materials and labor shortage, the latter being an issue due to the import of cheap labor from surrounding countries, many times illegally (Technavio, 2018).

A study was conducted in Thailand that virtualization and cloud computing can directly benefit numerous industries; more development of these technologies must be done to make effective use of their capabilities (Keesookpuna & Mitomob, 2012). Some policy changes need

to be adapted to increase the possibility of more efficient use including an effort to improve the internet capability of employees, provide investment incentives such as tax reductions and low-cost loans for the setup of cloud computing systems, and to develop a reliable internet network with advanced capabilities and low cost use.

Social networking sites are being used with more regularity by employed job seekers as a job search tool (Suki, Ramayah, & Ming, 2011.). As AEC came more into focus and talent migration became more prevalent, job seekers began looking at social media as a valuable resource to access information on future employment. However, developers of social networking sites need to provide additional useful functionalities or tools on these sites to help users with their job search. Not only will employment opportunities for job seekers benefit, as well, the Thai construction industry will have access to a larger talent pool of skilled and technologically adept employees.

With these technologies, businesses can respond quickly to a numerous issues such as reducing the amount of time and costs to establish and customize new business process platforms. Businesses would also be enabled to choose what elements of the business process to use, where the process would be customized and be able to quickly implement to their needs as opposed to a standardized process (Espenson, 2017). With a more streamlined process and systems, the business could then move seamlessly from process to process whenever market conditions or needs changed. More efficiency leads to faster response and for the Thai construction industry this can mean dramatic cost savings translating into less waste, greater productivity and ultimately more satisfied customers.

Within the ASEAN Economic Community 2015 (AEC), it was imperative that the scope and style of business process management for the Thai construction industry needed to change to maintain its competitiveness.

ASEAN was formed in 1967 based on three tenants of regional cooperation: security, socio-cultural integration, and economic integration (ASEAN Secretariat, 2011). In 1997, ASEAN leaders declared the ASEAN Vision 2020 (ASEAN Secretariat, 2009) which aimed to transform the ASEAN community into a stable, prosperous and highly competitive region with equitable economic development, and reduced poverty and socioeconomic disparities (ASEAN). At the 2007 Summit (13th ASEAN Summit, 2007), ASEAN leaders affirmed their strong commitment to accelerate the establishment of an ASEAN Economic Community (AEC) by 2015. By unifying the ASEAN countries into a single market and production base governed by the principles of

an open, outward-looking, inclusive, and market-driven economy, the goal was to make ASEAN a more dynamic and competitive economic block (Parsons, 2010).

The AEC comprises the following five core elements to create a single market and production base:

1. Free flow of goods
2. Free flow of services
3. Free flow of investment
4. Freer flow of capital
5. Free flow of skilled labor

Literature Review

The main research objectives were to determine how the Thai construction industry is currently using business process management within their respective companies and how and if they are changing to deal with AEC and promote competitive advantage in ASEAN.

While many Thai businesses having previous experience through joint ventures and partnerships with multinationals or in expanding their business abroad, with the introduction of the AEC, some threats and opportunities needed to be considered.

First, AEC members faced a free trade market (Chia, 2011). Numerous goods are now being sold without any additional tax in different countries, creating a single market entity for all ASEAN countries. Thus, Thai business can benefit from the single market, allowing more products to be sold and thereby generating more revenues.

Second, labor migration that is critical to the construction industry is occurring on a massive scale (Kanjanabootra & Corbitt, 2016). People from countries that provide a comparatively low minimum wage migrate to work in countries where conditions are more beneficial and pay is higher. This is both advantageous and disadvantageous, as countries can experience brain drain as more talented people move from their country of origin to countries with more potential for gain.

Third, investors find a larger market to enable them to make smarter choices to invest their money (Supadhiloke, 2011). According to Handley (2017), areas particularly attractive in this area are the strategic location of Thailand between China and India, ASEAN free trade access including establishment of an Eastern Economic Corridor (EEC) and Board of Investment (BOI) incentives.

Fourth, outside of the AEC, countries like Australia, Japan, China, India, New Zealand, South Korea, are interested in this the project, creating potentially the largest market in the world (Gugler & Chaisse, 2010)

Fifth, the framework of AEC also looks to invest in infrastructure projects in developing countries such as Laos, Myanmar, Cambodia, and Vietnam and thereby driving the world economy (OECD, 2011).

Finally, improved logistics are also a byproduct of the AEC infrastructure and investment potential (Hill & Menon, 2010).

Of all these issues, if the Thai construction industry is to integrate smoothly with AEC and maintain itself as a competitive industry, it must prioritize these issues. As construction tends to be a labor intensive industry, the migration and management of labor should be prioritized.

The intention of the fast-track creation of AEC by ASEAN member countries, was to transform the region into a single market and production base by establishing the freer flow of goods, services, investment, capital, and, crucially, skilled labor (Bernard, 2015). However, numerous obstacles lie ahead. A major problem for freer movement of labor in ASEAN is that there is still no uniform visa system for foreign businesses and skilled workers and work permits and employment visas that are subject to restrictive domestic rules and regulations.

The future trend. Commerce Ministry Permanent Secretary Yanyong Phuangrach stated at the "Thailand Economic Profile, AEC Adaptation and Housing Development Direction" seminar that the ASEAN Economic Community with its full implementation would open up the whole region to business opportunities for the Thai construction industry in areas such as engineering, architecture and manufacture of construction materials (Phuangrach, 2012). Some of the biggest challenges for the Thai construction industry are to research regulations of the various ASEAN members and raise their standards to meet AEC requirements (Menon & Melendez, 2017).

The former president of the Association of Siamese Architects under Royal Patronage, Taweejit Chandrasakha, also indicated that industry and related businesses want to take advantage of the opportunity to expand into the region to develop their quality, standards and business process management to meet regional and international standards to be competitive. "Thai contractors, property developers, home-builders, architects and engineers

will have to learn the rules and international standards as they expand into AEC member countries", he said (Chandrasakha, 2012).

AEC forced the Thai construction industry to investigate the rules related to the building industry in each country, with more concern for the quality of products used thus ensuring a higher level of security for people using their buildings. Design and construction process needed to be reviewed and evaluated by experts to ensure safety standards. Thai construction companies that have developed their systems to meet the standards and adapt their business process management will be the ones that will benefit from AEC. If the Thai construction industry does not make these adjustments, they will find themselves up against substantial competition, not just from the domestic market, but from other markets elsewhere in ASEAN.

To date, the Thai construction industry has been based on local or national laws, standards, and regulations and practices, which create numerous problems for working outside national boundaries with international firms. A major problem is that no consensus has been made that would allow for alignment of these issues. The outstanding consensus is that even with AEC in place, little, if anything, will change in the immediate to near future (Kanjanabootra & Corbit, 2016).

Prasong Tharachai, former president of the Engineering Institute of Thailand, feels that the AEC provides both pluses and minuses for the construction business. The most obvious being that the market is larger than the market is in Thailand alone. AEC also opened Thailand up to foreign companies that can meet the regional standards for engineering, architecture and construction quality (The Nation, 2012).

Home Builder Association president Dr. Patchara Tantayanyong said these principles also apply to her sector (The Nation, 2012). Small private contractors often face problems with service, design and construction quality due to proper or outdated business process management. In order to counter this problem, the association issued a policy to revise standards throughout the system. The strategy is aimed at maintaining consumers' confidence in local home-builders in terms of quality and reliability, which will result in expansion of the industry within the framework of AEC.

Permanent Secretary of the Ministry of Labor, Mrs. Songsri Boonba has indicated that Australia is seeking skilled labor from Thailand to work in that country's construction industry under a government-to-government contract (Chiang Mai Mail, 2012).

While more than 20,000 workers have been requested by Australia, it is necessary that all concerned must have experience and possess some English speaking skills enabling acceptable to Australian employers. She stressed that it is important for them to be able to communicate for worker's safety and in order to express their thoughts, feelings or prevent being taken advantage of. To this end the Department of Employment and the Department of Skill Development will provide qualified candidates with a language training program.

Research Methodology

A qualitative approach using in-depth interviews was used in this research to more easily discover the subjects real understanding of their experience, their interpretation of those experiences and how those experiences influenced their interpretation, influenced their environment and what, if any, those experiences had on subsequently influencing their actions and or responses.

It was also felt that the qualitative approach in this research was very well suited as it looked to discover the relationship between business process management and the enhancement of competitive advantage and the ability of the Thai construction industry to smoothly integrate into the plan of AEC now and in the future. Data was gathered for this research in a way as to produce a repetitive relationship pattern from this particular context to create an emergent theoretical understanding of why an improved business management process can or cannot contribute to enhancing a Thai construction business's competitive advantage.

The main emphasis of this research was based on how people view and interpret their environment as well as many additional influences that affect their lives. The conclusions that were conveyed from this research can be only assumed corrected based on the particular subjects and the responses given for this research. Quantitative research could also be used to test a wider population of subjects with a broader based research.

A qualitative analytical approach was used in this research. The goal of qualitative research can be stated as "in-depth understanding." (Bonnie & Schensul, 2005). In this way, data collected set to explain and give meaning to information, as opposed to confirming or disconfirming a theoretical position as hypothesized from data collected. Theory and investigation were interwoven in a process of induction (Marshall & Rossman, 2010).

A series of three in-depth interviews were conducted with thirty subjects in senior management positions from a population of fifteen major contractor firms in the Thai construction business.

Convenience Sampling Strategy or selected cases based on ease of accessibility has been apply for this study (Patton, 2001). Subjects interviewed were directors (60%) with 80% of those subjects responding having a minimum of a Master degree (15% from research abroad; 35% from regional research programs and the remaining subjects (50%) having studied in Thai university graduate programs.

Results of the Research

From the interviews, 50% of the subjects had heard about the AEC, but could provide few details of what it involved or how it might relate to their respective companies or the Thai construction industry. When questioned on what measures their respective companies had taken to integrate with AEC, a large number (90%) indicated they had done little or nothing to change their business process to align with other countries or with other company systems in participating countries. For the most part, a majority of Thai construction businesses (85%) still use traditional bookkeeping and record keeping methods. It was also discovered that some businesses (15%) still used a ledger system for record keeping and for organizing their business process management. Internally developed software was currently used for business process management by 30% of the subjects, while 70% of the subjects had purchased software from outside retail vendors.

Subjects were asked about regional standards they applied to their business process management with the majority stating (92%) that work was already in progress on these standards. The remainder of subject's businesses still had not begun to adapt to regional standards.

A lack of understanding of the AEC within the private and civil sectors as well as the Thai government were seen by the majority of subjects (95%) who responded as major issues in impeding future competitive advantage and economic integration. The remaining subjects (5%) felt AEC was a critical factor in sustained competitiveness. To counter this understanding deficit, subjects responded that their own companies were focusing on quality of their work improvement by using more effective record keeping strategies, better approaches to scheduling and the overall management of their business process. Improving the effectiveness

and efficiency of their technical staff was also noted as very important to encourage them to keep up with the latest market trends, cost controls, improve their business process management and enable a more efficient economic integration.

None of the subjects who responded in this research were working in companies that currently had projects outside of Thailand. In the past, however, subjects noted that in the past they had worked with multinational firms within Thailand. In 30% of those cases, subjects needed to adapt their business process management to effectively interface with the multinationals record keeping and information system processes.

In order to meet the basic standards of the ASEAN community and compete with standards of global business practices, 70 % of subjects believed their business process management needed to be significantly upgraded.

Business productivity and cost reduction (95%) were the primary concerns of the subjects; secondary concerns were IT and business alignment (75%), agility of their business and responsiveness to adapt to market conditions (68%), and dependability and effectiveness of the company's IT systems (73%). These factors were noted as weak spots in the companies' business process management and ability to effectively maintain competitive advantage.

When asked about the most positive advantage for companies within the framework of ASEAN and AEC, 75% of the subjects responded that as immigration requirements and migration of talent across borders ease, more engineers will be attracted to seek employment in Thailand. It was also indicated by a similar number of subjects that technical staff could have the potential to become more efficient as larger talent pools became available from neighboring countries, thus offering a wider choice of competencies, talent and experience. The biggest challenge faced by their companies, as noted by a majority of subjects (98%) was that many engineers, engineering firms, contractors and competitors would seek employment in Thailand because of its developed infrastructure and logistics capabilities. In the same way, highly qualified engineers may leave Thailand to work in other ASEAN countries due to higher pay and more advancement within their profession, thus creating a problem of how to adjust the business process management to meet the necessary changes to retain their competitive edge.

Conclusion

With ASEAN Economic Community (AEC) 2015, a drastic change, transforming the economic and social landscapes of the Thai construction industry, has been necessitated. Yet, from the research conducted in this research, the majority of the Thai construction industry is still struggling to meet the needed changes necessary for improved business process management, economic integration and the competitiveness that AEC has brought to the ASEAN community.

Business process management systems need to be put in place or existing systems improved to allow the integration of multi-dimensional systems that contain all major functions of the business. These include planning and control, as well as optimizing the global supply chain with state of the art information technology to ensure global standards that will ultimately make regional integration functional and keep the Thai construction industry competitive. Many of the subjects felt they were still thinking domestically about regional competition and outside of Thailand. Their position in the company also had an effect on how they viewed their competitive advantage, their need to improve their business process management and integration into the ASEAN economic community.

Agreements such as ATIGA (Asian Trade in Goods Agreement) and ACIA (Asian Comprehensive Investment Agreement) are seen as important developments in ASEAN. Yet the large amounts of significant policy information need to be easy to grasp and assess for industries like Thai construction industry if they are to adjust their current business processes management to assess and meet new opportunities that may emerge.

The language skills and professional standards required across ASEAN countries vary significantly, challenging the movement of a skilled workforce, with English skills putting Thailand well behind many other ASEAN neighbors (Southiseng & Walsh, 2011).

As well, qualifications and rankings of quality in tertiary education vary greatly from country to country. Language proficiency levels and educational qualifications must also be established to recognize a certain mutual standard (Pongwiritthon, 2015).

Private sector associations such as the Thai Construction Industry need to encourage the government to provide a more conducive environment for those sectors to compete with their ASEAN neighbors (Kaewsri & Tonghong, 2011). From this, Thailand should develop the private sector economies before trying to venture abroad.

The Thai construction industry needs to better develop its business process management systems to incorporate its interests, requirements, opinions and actions taking into account the surrounding market forces. The flow of information and linkages between domestic and foreign businesses needs to be more refined and become more thorough and concise. It is vital that government support this effort and engage private sectors such as the Thai construction industry in ASEAN matters, since private sector participation is still weak in ASEAN economies (Das, 2012).

In addition, the private sector should be the main facilitator in streamlining and framing the progress of the AEC. The Thai construction industry needs to be more involved in future policy actions better enabling the industry to develop the knowledge base and capacity to adjust their business process management, react to current market trends and recognize signs for a more competitive and advantageous economic integration. Measures must be taken to recognize key determinants that will improve transparency and recognize market trends that will continue to give the Thai construction industry more competitive advantage. Most of all, strong and competent leadership is required to achieve and maintain more viable business process management and a solid economic framework to ensure competitive advantage and effective integration of ASEAN and the vision of AEC.

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